



CTGTCACGCCGGGCTCTACGTCCAGGGAGGGAGGGGCGGCCACACCCAGGCCCGCACCGCTGGGAGTCTGAGGCCTGAGTGAGTGTGTTGGCCGAGGCCTGCATGTCGGGCTGAAGGCT
GAGTGTCGGGCTGAGGCCTGAGCGAGTGTCCAGCCAAGGGCTGAGTGTCAGCACACCTGCCGTCTTCACTTCCCACAGGCTGGCGCTCGGCTCCACCCAGGGCCAGCTTTTCCTCAC
CAGGAGCCCGGCTTCCACTCCCCACATAGGAATAGTCCATCCCCAGATTCCGCCATTGTTACCCCTCGCCCTGCCCTCCTTTGCCCTTCCACCCACCATCCAGGTGGAGCCCTGAGAA
GGACCCCTGGGAGCTCTGGGAATTGAGGTGACCAAAGGTGTGCCCTGTACACAGGCGAGGACCCTGCACCTGGATGGGGGTCCCTGTGGGTCAAATTGGGGGAGGTGCTGTGGGAGTAA
AATACTGAATATATGAGTTTTTCAGTTTGA

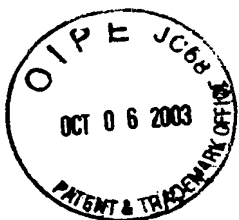
FIG. 11U



N-terminal domain truncated telomerase

ATGCCGCGCGCTCCCCGCTGCCGAGCCGTCGCTCCCTGCTGCGCAGCCACTACCGCGAGGTGCTGCCGCTGGCCACGTCGTG
M P R A P R C R A V R S L L R S H Y R E V L P L A T F V
CGGCGCTGGGGCCCCAGGGCTGGCGGCTGGTGAGCGCGGGGACCCGCGCGCTTTCCGCGCGCTGGTGCCCACTGCTGGTGTGCGTGCCCTGGGACGACGGCCGCCCCCGCGC
R R L G P Q G W R L V Q R G D P A A F R A L V A Q C L V C V P W D A R P P P A A
CCCCCTCTCCGCGAGGTGCTGCTGAAGGAGCTGGTGGCCGAGTGCTGCAGAGGCTGTGCGAGCGCGCGCGAAGAACGCTGCTGGCTTCGGCTTCGCGCTGCTGGACGGGGCCCG
P S F R Q V S C L K E L V A R V L Q R L C E R G A K N V L A F G F A L L D G A R
CGGGGGCCCCCGAGGCTTACCACACGCGTGGCGAGCTACCTGCCCAACACGGTGACCGACGCACTCGGGGGGAGCGGGGCTGGGGGCTGCTGCTGCGCCGCTGGGCGACGACGT
G G P P E A F T T S V R S Y L P N T V T D A L R G S G A W G L L L R R V G D D V
GCTGGTTACCTGCTGGCAGCTGCGCGCTCTTTGTGCTGGTGGCTCCAGCTGCGCTACCAAGTGTGCGGGCGCGCGCTGTACAGCTCGGCGCTGCCACTCAGGCCCGGGCCCCCGC
L V H L L A R C A L F V L V A P S C A G P P L Y Q L G A A T Q A R P P P
ACAGCTAGTGGACCCGAAGCGCTCTGGGATGCGAAGCGGCTGGAACCATAGCGTCAGGAGGCGGGGTCCCCCTGGGCTGCGAGCCCGGGTGGAGGAGCGCGGGGCGAGTGC
H A S G P R R R L G C E R A W N H S V R E A G V P L G L P A P G A R R R R G G S A
CAGCGAAGTCTGCGCTGCGCAAGAGGCGCAGGCGTGGCGCTGCGCTGAGCGGAGCGGCGCTGGGCGAGGGTCTGGGCGCCACCGGGCAGGACGCGTGGACGAGTGACCG
S R S L P L P K R P R G A A P E P E R T P V G Q G S W A H P G R T R G P S D R
TGGTTTCTGTGGTGTACCTGCGCAGACCCCGAAGAACCACTCTTTGGAGGGTGGCTCTCTGGCAGCGCCACTCCCACTCCGTTGGGCGCGCAGCACCAGCGGGCCCCC
G F C V V S P A R P A E E A T S L E G A L S G T R H S H P S V G R Q H H A G P P
ATCCACATCGCGGCCACCACTGCTGGGACAGCCTGTGCCCCGCTGTACGCGGAGACCAAGCACTTCTCTACTCTCAGGCGACAAGGAGCAGCTGCGGGCCCTCTTCTACTCAG
S T S R P P R P P W D T P C P P V Y A E T K H F L Y S S G D K E Q L R P S F L L S
CTCTCTGAGGCCAGCCTGACTGGCGCTCGGAGGCTCGTGAGACCATCTTTCTGGGTTCAGGCGCTGGATGCCAGGACTCCCCGAGGTGCCCCGCTGCCCCAGCGCTACTGGCA
S L R P S L T G A R R L V E T I F L G S R P W M P G T P R R L P R L P Q R Y W Q
AATGCGGCCCTGTTTCTGGAGTGTCTGGGAACACGCGAGTGCCCTACGGGGTGTCTCTCAAGACGCACTGCGCGCTGCGAGCTGCGGTACCCCGCAGCGCGGTGTCTGTGCCG
M R P L P L E L L G N H A Q C P Y G V L L K T H C P L R A A V T P A A G V C A R
GGAGAAGCCCCAGGCTCTGTGCGGCCCGGAGGAGGAGACAGACCCCGCTGCGCTGGTGAGCTGCTCCGCGAGCACAGAGCCCTGGCAGGTGTACGGCTCTGTGCGGGCTG
E K P Q G S V A A P E E E D T D P R R L V Q L L R Q H S S P W Q V Y G F V R A C
CTGCGCGCGCTGGTGGCCCCAGGCTCTGGGGCTCCAGGCAACAAGAACCGCTTCTCAGGAACACCAAGAGTTCTATCTCCCTGGGAAGCATGCCAAGCTCTCGTGCAGGAGCT
L R R L V P P G L W G S R H N E R R F L R N T K K F I S L G K H A K L S L Q E L
GACGTGGAAGATGAGCGTGGGGGACTGCGCTTGGCTGCGCAGGAGCCAGGGGTGGCTGTGTTCGGCGCCAGAGCACCGTCTGCGTGAGGAGATCTGGCCAAGTTCTGCACTGGCT
T W K M S V R D C A W L R R S P G V G C V P A A E H R L R E E I L A K F L H W L
GATGAGTGTGTACGTGCTGAGCTGCTCAGGTCTTTCTTTTATGTACGGAGACCAAGTTTCAAAAGAACAGGCTCTTTTCTACCGGAAGAGTGTCTGGAGCAAGTTGCAAAGCATTGG
M S V Y V V E L L R S F F Y V T E T T P Q K N R L F F Y R K S V W S K L Q S I G
AAT - - NNN - - GACAGTCACCGGGGGTGGACCGCGGACTGGGCGTCCCCAGGGTGTACTATAGGACCAGGTGTCCAGGTGCCCTGCAAGTAGAGGGGCTCTCAGAGGCGTCTGGCTGG
CATGGGTGACGTGGCCCCGGGATGGCTTCTGCGTGTGCTGCCGTGGGTGCCCTGAGCCCTCACTGAGTCGGTGGGGCTTGTGGCTTCCCGTGAGCTTCCCCCTAGTCTGTGTCTG
CTGAGCAAGCTCTCTGAGGGGCTCTCTATTG-

FIG. 11A



Truncated protein that lacks motif A

ATGCCGCGCGCTCCCGCTGCCGAGCCGCTGGCTCCCTGCTGCGCAGCCACTACCGGAGGTGCTGCCGCTGGCCACGTTCTGTG
M P R A P R C R A V R S L L R S H Y R E V L P L A T F V

CGGCGCCTGGGGCCCCAGGCTGGCGCTGGTGCAGCGCGGGACCGGGCGCTTTCCGCGCGCTGGTGGCCAGTGCCTGGTGTGCGCTGGCCAGCAGCGCGCCCCCGCGG
R R L G P Q G W R L V Q R G D P A A P R A L V A Q C L V C V P W D A R P P P A A

CCCTCTCTCCGCGAGGTGTCTGCTGAAGAGCTGGTGGCCCGAGTGTGTCAGAGGCTGTGCGAGCGCGCGCGAAGAACGTGCTGGCTTCCGCTTCCGCTGCTGGACGGGGCCCC
P S F R Q V S C L K E L V A R V L Q R L C E R G A K N V L A F G F A L L D G A R

CGGGGGCCCCCGAGGCTTACACCAGCGTGGCAGCTACCTGCCCAACCGGTACCGACGCACTGCGGGGAGCGGGCGTGGGGGTGCTGCTGCGCGCGTGGGCGACGACGT
G G P P E A F T T S V R S Y L P N T V T D A L R G S G A W G L L L R R V G D D V

GCTGGTTCACCTGCTGGCAGCTGCGCGCTCTTTGTGTGGTGGCTCCAGCTGCGCCTACAGGTGTGCGGGCGCGCTGTACAGCTGCGCGCTGCTCAGGCGCGCCCCCGCC
L V H L L A R C A L F V L V A P S C A Y Q V C G P P L Y Q L G A A T Q A R P P P

ACACGCTAGTGGACCCCGAAGCGCTGGGATGCGAAGCGGCTGGAACTAGCGTACGGGAGGCGGGGTCCCCCTGGGCTGCGAGCCCGGGTGGAGGAGCGGGGGCAGTGC
H A S G P R R R L G C E R A W N H S V R E A G V P L G L P A P G A R R R G G S A

CAGCCGAAGTCTGCGCTTCCCAAGAGGCGCAGGCTGGCGCTGCCCTGAGCCGAGCGGACGCGCGCTGGCGCCACCGGGCAGGACGCGTGGACGAGTACCGG
S R S L P L P K R P R R G A A P E P E T P V G Q G S W A H P G R T R G P S D R

TGGTTCTGTGTGTGTACCTGCGAGACCCCGCAAGAGCCACCTCTTTGGAGGTGCGCTCTCTGGCAGCGCGCACTCCACCCATCCGTGGCGCGCGCAGCACCAGCGGGCCCCC
G F C V V S P A R P A E E A T S L E G A L S G T R H S H P S V G D K E Q L R P S F L L S

ATCCACATCGCGGCCACCGTCCCTGGGACACGCTTGTCCCCCGGTACCGCGAGCAAGCACTCTCTACTCTCAGGCGCAAGGAGCAGTGGCGCTCTCTACTCTAG
S L R P S L T G A R R L V E T I F L G S R P W M P G T P R R L P R L R R V G D D V

CTCTGAGGCGCCGCTGCTGCGCTGGAGGCTCGTGGAGACCATCTTTCTGCTTCCAGGCGCTGGATGCCGAGTCCCCCGAGGTGGCCCGCTGCCCGAGGCTACTGGCA
S L R P S L T G A R R L V E T I F L G S R P W M P G T P R R L P R L R R V G D D V

AATGCGGCGCTGTCTGAGCTGCTTGGGAACACGCGCAGTCCCTACGGGTGCTCTCAAGAACGCACTGCCGCTGGAGCTGCGGTACCCCGAGCAGCGGTGTCTGTGCCG
M R P L F L P K R P R R G A A P E P E T P V G Q G S W A H P G R T R G P S D R

GGAGAAGCCCGAGGCTCTGTGGCGGCGCCGAGGAGGAGGACACAGACCCCGTGGCTGGTGGCAGTCTCTCCGCGCAGCAGCAGCCCTGGCAGGTGTACGGCTCTGTGGCGGCTC
E K P Q G S V A A P E E E D T D P R R L V Q L L R Q H S S P W Q V F P F L H W L

CCTGCGCGGCTGTGTCGCCCGCTTGGGGCTTCCAGGCACAAAGCGGCTCTCTCAAGAACGCACTGCCGCTGGAGCTGCGGTGAGGAGTCTGCTGAGGAGTCTGCTGAGGAGT
L R R L V P P P G L W G S R H N E R R F L R N T K K F I S L G K H A K L S L Q E L

GACGTGGAAGATGAGCTGCGGGACTGCGCTTGGCTGCGCAGGAGCCAGGGGTGGCTGTCTCCGCGCAGCAGCAGCTCTGCGTGGAGGAGTCTGCGCAAGTCTCTGCACTGGT
T W K M S V R D C A W L R R S P G V G C V P A A E H R L R E E I L A K P L H W L

GATGAGTGTGTACCTGCTGAGCTGCTCAGGTCTTTCTTTATGTACGAGACCACTTCAAAAGAACAGGCTCTTTTCTACCGGAAGAGTGTCTGGAGCAAGTGTCAAGCACTGG
M S V Y V V E L L R S F F Y V T E T T F Q K N R L F F Y R K S V W S K L Q S I G

AATCAGACAGCACTGGAAGAGGTGAGCTGCGGGAGCTGTGGAAGCAGAGTCAAGCAGCATCGGGAAGCCAGGCGCGCTGCTGACGTCCAGACTCCGCTTCACTCCCAAGCCTGA
I R Q H L K R V Q L R E L S E A E V R Q H R E A R P A L L T S R L R F I P K P D

CGGGCTGCGCGGATGTGAACATGGACTACGTGCGGAGCCAGAACGTTCCGAGAGAAAAGAGGCGCGAGCGTCTCACTCGAGGGTGAAGGCACTGTTCAGCGTGTCAACTACGA
G L R P I V N M D Y V V G A R T F R R E K R A E R L T S R V K A L F S V L N Y E

GCGGGCGCGCGCGCGCGCTCTGCGGCGCTGTGCTGGGCTGGACGATATCCACAGGCGCTGGCGCACCTTCTGCTGCTGCTGCGGGCCAGGACCCCGCGCTGAGCTGTACTT
R A R R P G L L G A S V L G L D D I H R A W R T F V L R V R A Q D P P P E L Y F

TGTCAGG
V K GACAGGCTCAGGAGGTCTACGCGAGCATCATCAAAACCCAGAACAGTACTGCGTGGCTGGTATGCGGTGGTCCA
D R L T E V I A S I I K P Q N T Y C V R R Y A V V Q

GAAGGCGCGCCATGGGCACTGCGCAAGGCTTCAAGAGCCAGTCTTACCTTGACAGACCTCCAGCGGTACATGCGACAGTTCGTGGCTCACTGCGAGGAGCAGCGCGCTGAGGGA
K A A H G H V R K A F K S H V S T L T D L Q P Y M R Q F V A H L Q E T S P L R D

TGCCGTGCTCATCGAGCAGAGTCTCTCCCTGAATGAGGCGAGCAGTGGCTCTTCGACGTCTTCTACGCTTATGTGCCACACGCGGTGCGCATCAGGGGCAAGTCTACGTCAGTG
A V V I E Q S S S L N E A S S G L F D V F L R F M C H H A V R I R G K S Y V Q C

CCAGGGGATCCCGAGGCTCCATCTCTCCAGCTGTCTGCGAGCTGTGCTACGGCGACATGGAGAACAAGCTGTTTGGGGGATTCCGGGGGAGGGGTGCTCTGCTGTTGGTGA
Q G I P Q G S I L S T L L C S L C Y G D M E N K L F A G I R R D G L L L R L V D

TGATTTCTTGTGGTGACACCTCACTCACCCACGGAACCTTCTCAGGACCTGGTCCGAGGTGTCCCTGAGTATGGCTGCGTGGTGAAGTTCGGAAGACAGTGGTGAACCTCCC
D F L L V T P H L T H A K T F L R T L V R G V P E Y G C V V N L R K T V V N F P

TGTAGAAGACGAGGCGCTGGGTGGCAGGCTTTTGTTCAGATGCGGCGCCACGCGCTATTCCCTGGTGGCGCTGCTGCTGGATACCCGAGCCCTGGAGGTGAGAGGAGTACTCCAG
V E D E A L G G T A F V Q M P A H G L F P W C G L L L D T R T L E V Q S D Y S R

GTGAGCGCACTGGCGGAGGTGGAGCTGTGCGCGGCTGGGGCAGGTGCTGTGCGAGGCGGTGCGTCCACCTCTGCTTCCGTGTTGGGGCAGGCGACTGCCAATCCCAAGGTCAGA
*

TGCCACAGGCTGCCCTCTGCTCCATCTGGGGCTGAGCAAAATGCATCTTTCTGTGGAGTGGGGTCCCTCAACCGGAGCAGTCTTTCTGTGCTATTTTGGTAA...

FIG. 11J

N-terminal domain truncated telomerase (ver. 2)

Truncated protein 1 (ver. 2)

01K - 5C68
OCT 06 2003
PATENT & TRADEMARK OFFICE

Altered C-terminus protein (ver. 2)

[illegible]

FIG. 11S

Protein that lacks motif A (ver. 2)

ATGCCGCGCGCTCCCGCTGCCGAGCGTGCCTCCCTGCTGCGCAGCCACTACCGCAGGTGCTGCCGCTGGCCACGTTCTGTG
M P R A P R C R A V R S L L R S H Y R E V L P L A T F V

CGGCGCTGGGCCCCAGGGCTGGCGGCTGGTGACGCGGGGACCCGGCGCTTTCGCGCGCTGGTGCGCCAGTGCCTGGTGTGCGTGCCTGGGACGCACGGCGCCCCCGCGCG
R R L G P Q G W R L V Q R G D P A A F R A L V A Q C L V C V P W D A R P P P A A

GGCTCCCGGGTCCGCGTCCGGTGGGGTTGAGGGCGCGCGGGGAAACGAGCATCGGAGAGCAGCGCAGGCGACTCAGGGCGCTTCCCGCGAGGTG
G L P G V G V R L G L R A A G G N Q R H A E S S A G D S G R F P R R
A S P G S A S G W G * G R P G G T S D M R R A A Q A T Q G A S P A G
P P R G R R P A G V E G G R G E P A T C G E Q R R R L R A L P P Q V

CCCTCTCTCCGCGAGGTGCTGCTGAAGGAGCTGGTGGCCGAGTGTGCGAGGCTGTGCGAGCGCGCGCGAAGACGTGCTGGCTTCCGCTTCCGCGTGTGACGGGGCCCG
P S F R Q V S C L K E L V A R V L Q R L C E R G A K N V L A F G F A L L D G A R

CGGGGGCCCCCGAGGCTTACCAACAGCGTGCAGCTACCTGCCAACCGTGACCGACGCACTCGGGGGAGCGGGCGTGGGGCTGCTGCTGCGCGCTGGGCGACGACGT
G G P P E A F T T S V R S Y L P N T V T D A L R G S G A W G L L L R R V G D D V

GCTGGTTACCTGCTGGCAGCTGCGCGCTTTGTGCTGGTGGCTCCAGCTGCGCTTACCAGTGTGCGGGCGCGCGCTGTACCAGCTCGGCGTGCCTCAGGCCCCGGCCCCGCG
L V H L P L R C A L F L V L V A P S C A Y Q V C G P P L Y Q L G A T F G A L L D G A R

ACAGCTAGTGGACCCGAGGCGTGGGATGCGAACGGGCTGGAAACATAGCTCAGGAGGCGGGGTCCTGGCTGGCGCTCCAGCCCCGGGTGGAGGAGCGGGGGCAGTGC
H A S G P R R R L G C E R A W N H S V R E A G V P L G L P A P G A R R R G G S A

CAGCGAAGTCTCGCTTGCCTAAGAGGCGCGAGGCTGGCGTGCCTTACGCGGAGCGGACGCGCTGGGCGAGGGTCTGGGCGCACCCGGGCGAGGCGCTGGAGCGGAGTGC
S R S L P P R P R P R G A A P E R T P V G Q G S W A H P F G S D R

TGGTTCTGTGGTGTGCTGCTGCCAGCGCGCGAAGAACCTCTTTGAGGGTGGCTCTTGGCAGCGCGCACTCCACCCATCCGTTGGGCGCGCAGCAGCAGCGGGCCCCCG
G F C V V S P A R P A E E A T S L E G A L S G T R H S H P S V G R Q H H A G P P

ATCCACATCGCGGCCACCACTGCTCCGCGGACCGCTTGTCCCGGGTACGCGGAGACCAAGCACTTCTCTACTCTCAGGCGACAGGAGCAGCTGCGCGCTGCTCCTCAG
S T S R L P P P W D T P C P P V A Y Q V C L F L Y S S G D K E Q L R P S F L L S

CTCTCTGAGGCGCGCTGCTGCTGCGGCTCGTGGAGACCTTTCTGGGTTCAGGCGCTGGTGCAGGACTCCCCCGAGGTGCGCGCGCTGCCCGAGGCTACTGGCA
S L R P S L T G A R R L V E T I F L G S R P W M P G T P R R L P R L P Q R Y W Q

AATGCGGCGCTGTTCTGGAGCTGCTGGGAACACGCGAGTGGCGCTACGGGGTGTCTCTCAAGAGCAGTGGCGCTGCGAGCTGCGGTACCCAGCAGCGGTCTGTGGCGCG
M R P L P L R L G N H A Q C P Y G V L L K T H C P L R A A V T P A A G V C A R

GGAGAAGCCCCAGGCTCTGTGGCGCGCGCGAGGAGGACAGACCCCGCTGCGCTGTGTCAGCTGCTCCCGCAGCAGCAGCGCGCTGGCAGGTGACGCTTCTGTGGCGCGCTG
E K P Q G S V A A P E E E D T D P R R L V Q L L R Q H S S P W Q V Y G F V R A C

CCTGCGCGGCTGCTGCCCGAGCGCTCTGGGGCTCCAGGCGACAAAGAACCGCGCTTCTCAGGAACCAAGAGTTCATCTCCGCGGAGCATGCAAGCTCTCCTCAGGAGCT
L R R L V P P P G L W G R F R N E R R G F L R L K F I S L G K H A K L S L Q E L

GACGTGAAGATGAGCGTGGGACTGCGCTTGGCTGCGCAGGAGCCAGGGGTGGCTGTGTTCCGGCGCAGAGCAGCTGCTGCTGAGGAGATCTGGCGAAGTTCCTGCTGAGTGGCT
T W K M S V R D C A W L R R S P G V G C V P A A E H R L R E E I L A K F L H W L

GATGAGTGTGACGTGCTGAGCTGCTCAGGTCTTCTTTATGTCAAGGAGACCGTTCCTCAAAGAACAGGCTCTTTTCTACCGGAAGAGTGTCTGGAGCAAGTTCCTGCAAGCATTGG
M S V Y V V E L L R S F L T E T T F Q K N R L F F Y R K S V W S K L Q S I G

AATCAGACAGCACTTGAAGAGGCTGAGCTGCGGGAGCTGTGCGAAGCAGAGGTGAGGAGCATCGGGAAGCAGGCGCGCGCTGCTGAGTCCAGCTCCGCTTCATCCCAAGCCTGA
I R Q H L K R V Q L R E L S E A E V R Q H R E A R P A L L T S R L R F I P K P D

CGGGCTGCGCGCGATTGTGAACATGAGTACCTGCTGGGAGCCAGAACGTTCCGAGAGAAAGAGGCGGAGCGTCTACCTCGAGGCGGAAGCATGTTGAGCGTGTCAACTACGA
G L R P I V N M D Y V V G A R T F R R E K R A E R L T S R V K A L F S V L N Y E

GCGGGCGCGCGCGCGCGCGCTCTGGGCGCTGCTGCTGCGGCTGAGCATATCCAGGGCTGCGCGCACTTCTGCTGCGTGTGCGGGCGCGAGGACCCCGCCTGAGCTGTACTT
R A R R P G L L G A S V L G L D D I H R A W R T F V L R V R A Q D P C P C L Y F

GTGCAAG
V K GACAGGCTACCGGAGTTCAGGAGCATCATCAAAACCCAGAACAGTACTGCTGCGTGGTATGCGGTGCTCA
D R L T E V I A S I I K P Q N T Y C V R R Y A V V Q

GAAGCGCGCCATGGGACGCTCCGCAAGGCTTCAAGAGCCAGTCTTACCTTACAGACCTCCAGCGGTACATGCGAGAGTTCGTGGCTCACCTGAGGAGCAGCCCGCTGAGGGA
K A A H G H V R K A F K S H V S T L T D L Q P Y M R Q F V A H L Q E T S P L D

TGCGCTGCTATGAGCAGAGCTCTCCCTGAAGGAGCCAGTGGCTCTTCCAGCTCTTCTACGCTTCAATGTCACCAACCGCGTGCATCAGGGGCAAGTCTACGTCCAGTG
A V V I E Q S S S L N E A S S G L F D V F L R F M C H H A V R I R G K S Y V Q C

CCAGGGGATCCCGAGGCTCCATCTCTCCAGCTGCTGTCAGCTGTGCTACGGCGACGAGAACAGCTGTTTGGGGGATTCCGGCGGGAGGGCTGCTCCTGCTTGTGGGA
Q G I P Q G S I L S T L L C S L C Y G D M E N K L F A G I R R D G L L R L V D

TGATTTCTGTTGAGACCTCACCTCACCCACGAAACCTTCTCAGGACCTGGTCCGAGGTGTCCCTGAGTATGGCTGCGTGGTGAATTCGGAAGACAGTGGTGAATCTCC
D F L L V T P H L T H A K T F L R T L V R G V P E Y G C V V N L R K T V V N F P

TGTAGAAGACGAGGCGCTGGTGGCAGGCTTTGTTTCAGATGCGCGGCCACGGCTATTCCCTGGTGGCGCTGCTGCTGGATACCCGAGCCTGGAGTGCAGAGCTACTCCAG
V E D E A L G G T A F V Q M P A H G L F P W C G L L L D T R T L T R T A L S S

CTATGCGCGGACCTCCATCAGAGCTCTCACCTTCAACCGCGGCTTCAAGGCTGGGAGGAACATGCGTGCAGAACTCTTTGGGGTCTTGGCGTGAAGTGTACAGCTGTTTCTGGA
Y A R T S I R A S L T F N R G F K A G R N M R R K L F G V L R L K C H S L F L D

TTTGCAGGTGAACAGCTCCAGACGGTGTGACCAACATCTACAAGATCTCTGCTGCGAGGCTACAGGTTTACGCACTGTGTGCTGCACTCCCATTTTCATCAGCAAGTTTGAAGAA
L Q V N S L Q T V C T N I Y K I L L A Y R P H A C V L Q L P F H Q Q V W K N

CCCCACATTTTCTGCGGCTCATCTGACACGGCTCCCTCTGCTACTCCATCTGAAAGCAAGAACGAGGATGTGCTGGGGCGCAAGGGCGCGCGCGCTCTGCCCTCGGA
P T F F L R V I S D T A S L C Y S I L K A K N A G M S L G A K G A A G P L P S E

GGCGTGCAGTGGTGTGCGCAAGCACTTCTGCTCAAGCTGACTCGACACCGTTCACCTACGTCACCTCTGGGGTCACTCAGGACAGCCAGAGCAGCTGAGTGGGAAGTCTCC
A V Q W L Q A F L L K L T R H R V T Y V P L L G S L R T A Q L S R K L P

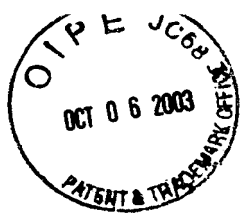
GGGACAGGCTGACTGCGCTGGAGGCGGAGCAACCGGCACTGCCCTCAGACTTCAAGACCATCTGGAGTATGCGCACCCGCGCACAGCGGCGAGAGCAGACACGAGCAGCG
G T T L T A L E A A A N P A L P S D F K T I L D

FIG. 11T



CTGTCACGCCGGGCTCTACGTCCCAGGGAGGGAGGGGGCGGCCACACCCAGGCCCGCACCGCTGGGAGTCTGAGGCCTGAGTGAGTGTGTTGGCCGAGGCCTGCATGTCCGGCTGAAGGCT
GAGTGTCGGGCTGAGGCCCTGAGCGAGTGTCCAGCCAAGGGCTGAGTGTCCAGCACACCTGCCGTCTTCACTTCCCCACAGGCTGGCGCTCGGCTCCACCCAGGGCCAGCTTTTCCTCAC
CAGGAGCCCGGCTTCCACTCCCCACATAGGAATAGTCCATCCCCAGATTGCCATTGTTCACCCCTCGCCCTGCCCTCCTTTGCCTTCCACCCACCATCCAGGTGGAGACCCTGAGAA
GGACCTGGGAGCTCTGGGAATTGGAGTGACCAAGGTGTGCCCTGTACACAGGCGAGGACCCTGCACCTGGATGGGGTCCCTGTGGGTCAAATTGGGGGGAGGTGCTGTGGGAGTAA
AATACTGAATATATGAGTTTTCAGTTTGA

FIG. 11U



Truncated protein that lacks motif A (ver. 2)

ATGCCGCGCGCTCCCCGCTGCCGAGCCGTGCGCTCCTGCTGCGCAGCCACTACCGCGAGGTGCTGCGCTGGCCAGGTCGTG
M P R A P R C R A V R S L L R S H Y R E V L P L A T F V
CGGCGCTGGGGCCCCAGGCGTGGCGGTGGTGCAGCGCGGGACCCGCGGCTTTCCGCGCGTGGTGGCCAGTGCTGTGTGCGTGGCTGGGACGCGCGCCCGCGCGC
R R L G P Q G W R L V Q R G D P A A F R A L V A Q C L V C V P W D A R P P P A A
GGCCTCCCCGGGTGCGCGTCCGCTGGGTTGAGGGCGCGCGGGGAAACAGCGACATGCGGAGAGCAGCGCAGGCGACTCAGGGCGCTCCCCCGCAGGTG
G L P G V G V R L G L R A A G G N Q R H A E S S A G D S G R F P R R
A S P G S A S G W G * G R P G G T S D M R R A A Q A T Q G A S P A G
P P R G R R P A G V E G G R G E P A T C G E Q R R R L R A L P P Q V
CCCCCTCTCCCGCAGGTGCTGCTGCTGAAGGAGCTGGTGGCCGAGTGTGTCAGAGGCTGTGCGAGCGCGCGCGAAGAACGTGCTGGCCTTCGGCTTCGCGTGTGCGAGCGGCGCG
L S F R Q V S C L K E L V A R V L Q R L C E R G A K N V L A F G F A L L D G A R
CGGGGGCCCCCGCAGGCTTACCACAGCGTGCAGCTACCTGCCAACACGCTGACCGACGACTGCGGGGAGCGGGCGTGGGGCTGCTGCTGCGCGCGTGGCGAGCAGCT
G G P P E A F T T S V R S Y L P N T V T D A L R G S G A W G L L L R R V G D D V
GCTGTTACCTGCTGCGACGCTGCGCGCTCTTTGCTGCTGGTGGCTCCGAGCTGCGCCTACCAGGTGTGCGGGCGCGCTGTACAGCTCGGCGTGCCTGCCAGTGGCGCGCGC
L V H L L A R C A L F V L V A P S C A Y V C G P P L Y Q L G A A T Q A R P P P
ACACGCTAGTGACCCCGAAGGCGTGTGGATGCGAACCGGCTGGAACCATAGCTCAGGAGGCGGGGCTCCCCCTGGGCTGCGAGCCCCGCGTGCAGGAGGCGCGGGGCGAGTGC
H A S G P R R R L G C E R A W N H S V R E A G V P L G L P A P G A R R R G G S A
CAGCGAAGTCTGCGTGTGCCAAGAGGCGCAGGCGTGGCGCTGCCCTGAGCCGCGAGCGGACGCCGCTTGGGCGGGTCTGGGCGCCAGCGAGCGCGGCTGACCG
S R S L P L P R P R R G A A P E P E R T V F G Q G S W A H P G R T R G P S D R
TGGTTTCTGTGGTGTCACTGCCAGACCCCGAAGAGCCACCTCTTTGAGGGTGGCTCTTGGCAGCGCGCTCCACCCATCGTGGCGCGCAGCAGCGCGGCGCGCGC
G F C V V S P A R P A E E A T S L E G A L S G T R H S H P S V G R Q H H A G P
ATCCATCGCGGCCACCGTCCCTGGGACACGCTTGTCCCCCGGTGACGCCGAGACCAAGCACTTCTCTACTCTCAGCGACAGGAGCAGCTGCGCGCTCTCTACTCAG
T S R L P P R P W D T P C P P V Y A E T K H F L Y S S G D K E Q L R P S F L L S
CTCTCTGAGGCGCCGCTGCTGCGCTCGGAGGCTCGTGAGACCATCTTTCTGGGTTCCAGGCGCTGGATGCCAGGACTCCCGCAGGTTCGCGCGCTGCGCGCGCTGCTGCGC
S L R P S L T G A R R L V E T I F L G S R P W M P G T P R R L P R L P Q R Y
AATGCGGCGCTGTTCTGTGAGTGTCTGGGAACACGCGCAGTCCCTACGGGCTGCTCTCAAGACGCGCTGCGCGCTGCGCGCTGCGCGCTGCGCGCTGCGCGCTGCGCGC
M R L P L P L E L L G N H A Q C P Y G V L L K T H C P L R A A V T P A A G V C A R
GGAGAAGCCCCAGGCTCTGTGGCGCGCGCGGAGGAGGACACAGACCCCGTCCGCTGGTGCAGTGTGCGCGCAGCAGCAGCGCTGCGAGGTGTACGGCTGTGCGCGCGCTG
E K P Q G S V A A P E E E D T D P R R L V Q L L R Q H S S P W Q V Y G F V A R
CCTGCGCGCGTGGTCCCCCGGCTCTGGGCTCCAGGACACGCGCTTCTCAGGAACACCAAGAGTTCATCTCCCTGGGAGAGCATGCCAGCTCTCGCTCGCAGGAGCT
L R R L V P P P G L W G S R H N R F L R N T K K P I S L G K H A K L S L Q E L
GACGTGGAAGATGAGCGTGGCGGACTGCGCTTGGCTGCGCAGGAGCCAGGGGTGGTGTGTTCGCGCGCAGAGCAGCTGCGTGGAGAGATCTGGCGAAGTCTCGCTGCTGCT
T W K M S V R D C A W L R R S P G V G C V P A A E H R L R E E I L A K F L H W L
GATGAGTGTGACGTGCTGAGCTGCTCAGGTCTTTCTTTATGTGTCAGGAGCAGCTTTTCTACCGGAAGAGTGTCTGAGCAAGTGTCAAAGCATGG
M S V Y V E L L R S F Y V T E T F Q K N R L F F Y R K S V W S K L Q S I G
AATCAGACAGCATTTAAGAGGGTGCAGCTGCGGAGCTGTGCGAAGCAGAGTTCAGGAGCATCGGGAAGCCAGGCGCGCTGCTGAGCTCCAGACTCCGCTTCATCCCCAAGCTGA
I R Q H L K R V Q L R E L S E A E V R Q H R E A R P A L L T S R L R F I P K P D
CGGCGTGGCGCGGATTGTGAACATGGACTACGCTGCGGAGCCAGAACGTTCCGACAGAAAAGAGGGCGGAGCTCTCACCTCGAGGGTGAAGGCACTGTTACGCGTGTCAACTACGA
G L R P I V N M D Y V V G A R T F R R E K R A E R L T S R V K A L P S V L N Y E
GCGGGCGCGGCGCGCGCTCTGGGCGCTGCTGCTGCGGCGTGGAGATATCCAGGGCGTGGCGCACCTTCGTGCTGCGTGTGCGGGCGCGGAGCCGCGCGCTGAGCTGACTT
R A R R P G L L G A S V L G L D D I H R A W R T F V L R V R A Q D P P P E L Y F
TGTCAGG
V K GACAGGCTCAGGAGGTTCAGCCAGCATCATCAACCCCGAAGACGTAAGTGTGCTGCGTGGTATGCGTGGTCCA
D R L T E V I A S I I K P Q N T Y C V R R Y A V V Q
GAAGCGCGCCATGGGCAGTCCGCAAGGCTTCAAGAGCCAGTCTCTACCTTGACAGACCTCCAGCGTACATGCGACAGTTCGTGGCTCACCTGCAGGAGACCGCCCGCTGAGGA
K A A H G H V R K A F K S H V S T L T D L Q P Y M R Q F V A H L Q E T S P L R D
TGCCGCTGTCATCGAGCAGAGCTCTCTGATGAGGCGCAGAGTGGCTCTTCGAGCTTCTACGCTTCATGTGCCACACCGCGTGGCGCATGAGGGCAAGTCTACGTCAGTG
A V V I E Q S S S L N E A S S G L F D V F L R F M C H H A V R I R G K S Y V Q C
CCAGGGGATCCCGCAGGCTCCATCTCTCCACGCTGCTGTCAGCCTGTGCTACGGCGACATGGAGAACAGCTGTTTGGGGGATTCGGGGGAGCGGGCTGCTCCTGCGTGTGGTGA
Q G I P Q G S I L S T L L C S L C Y G D M E N K L F A G I R R D G L L L R L V D
TGATTCTGTGTGACACCTCACCTCACCCAGCGAAAACCTTCTCAGGACCTGGTCCGAGGTGTCTCTGAGTATGGCTGCGTGGTGAACCTGCGGAAGACAGTGGTGAACCTCCC
D F L L V T P H L T H A K T F L R T L V R G V P E Y G C V V N L R K T V V N F P
TGTAAGACGAGGCGCTGGTGGCAGGCTTTGTTTCAGATGCCGCGCCACGGCTATTCCCTGGTGGCGCTGCTGCTGATACCCGGAACCTGGAGGTGCAGAGGCACTACCCAG
V E D E A L G G T A F V Q M P A H G L F P W C G L L L D T R T L E V Q S D Y S R
GTGAGCGCACCTGGCGGGAAGTGGAGCTGTGCCGCGTGGGCGAGGTGCTGCTCAGGCGCGTTCGCTCCACCTCTGCTTCCGTGTGGGCGAGGCACTGCCAATCCCAAGGGTCAGA
TGCCACAGGTTGCCCTCGTCCATCTGGGGTGGAGCAAAATGCATCTTTCTGTGGAGTGGGGTGCCTCACAACGGGAGCAGTTTCTGTGCTATTTTGGTAA

FIG. 11V

FIG. 11W